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Photocatalyst composite for purificn. and sterilisation applications -
comprising substrate with photocatalyst particles adhered to its surface
using degradation resistant adhesive

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Abstract (Basic): EP 633064 A

A photocatalyst composite comprises a substrate with photocatalyst particles adhered to it via a less degradative adhesive. Also claimed are (1) a process for producing a photocatalyst composite comprising disposing photocatalyst particles and a degradation-resistant adhesive on the substrate then fixing the adhesive to adhere the particles to the substrate; (2) a process for producing a photocatalyst composite comprising coating the substrate with a first layer of adhesive that is free of photocatalyst particles and fixing the adhesive, then applying a second layer of adhesive contg. photocatalyst particles and fixing the second layer adhesive; (3) a coating compsn. comprising a dispersion of the above particles and adhesive in a solvent; and (4) compsn. (3) further contg. a coupling agent.

PREFERRED COMPOSITE - The substrate may also have an absorbent adhered to its surface by the adhesive. The substrate may have a first layer of adhesive, pref. as above and optionally contg. inorganic particles, and a second layer comprising adhesive as above and photocatalyst particles. The photocatalyst particles comprise 5-98

vol.% of the vol. of adhesive and photocatalyst particles. **PREFERRED ADHESIVE** - A fluorinated polymer, pref. a copolymer of a vinyl ether and/or a vinyl ester and a fluoroolefin, a silicone-based polymer or an inorganic adhesive, pref. cement, is used. **PREFERRED CATALYST** - The photocatalyst particles are of TiO_2 , pref. contg. V, Fe, Co, Ni, Cu, Zn, Ru, Rh, Pd, Ag, Pt or Au or their cpds. or a mixt. as a second component inside the photocatalyst particles and/or on their surface.

USE - The composite is used in the decompn. and purificn. of harmful, malodorous or oily materials, and in purificn. and sterilisation of waste prods. They can be used for air and water purificn.

ADVANTAGE - The use of an adhesive that is not degraded by the catalyst allows the catalyst to be fixed to a substrate for long periods of time without affecting its activity. The catalyst can be adhered to substrates that are not suitable for prior art, high-temp. processes because are not heat-resistant, e.g. plastics or office walls, or they are difficult to heat.

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Abstract (Equivalent): US 5547823 A

A photocatalyst composite comprising a substrate having photocatalyst particles of titanium oxide adhered on it via an adhesive of fluorinated polymers, the photocatalyst particles containing a second component of at least one selected from the group consisting of metals and metal compounds of V, Fe, Co, Ni, Cu, Zn, Ru, Rh, Pd, Ag, Pt and Au, inside and/or on the surfaces of it, and the content of the photocatalyst particles being in the range of 50-98% by volume based on the total amount of the photocatalyst particles and the fluorinated polymers.

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Derwent Class: A14; A26; A81; G03; J04; P34; P83

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